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PUBLIC UTILITIES
COMMISSION

The Honorable Chairman and Members of
the Hawaii Public Utilities Commission
Kekuanaoa Building, First Floor
465 South King Street
Honolulu, Hawaii 96813

Dear Commissioners:

Subject: Docket No. 2008-0083 – Hawaiian Electric 2009 Test Year Rate Case
Hawaiian Electric's Response to Information Request, PUC-IR-117

On October 2, 2009, Hawaiian Electric Company, Inc. ("Hawaiian Electric") requested an extension of time, from October 2 to October 7, 2009, to file its response to PUC-IR-117, which was issued by the Commission on September 16, 2009.

Enclosed for filing is Hawaiian Electric's response to the information request.

Very truly yours,

Enclosures

cc: Division of Consumer Advocacy
Michael L. Brosch, Utilitech, Inc.
Joseph A. Herz, Sawvel & Associates, Inc.
Dr. Kay Davoodi, Department of Defense
James N. McCormick, Department of Defense
Theodore E. Vestal, Department of Defense
Ralph Smith, Larkin & Associates

PUC-IR-117

References: 1) Stipulated Settlement Letter ("Stipulation"), filed May 15, 2009 in Docket No. 2008-0083 regarding HECO's application for Approval of Rate Increase and Revised Rate Schedules and Rules.

2) Decision and Order, filed on August 5, 2009 in Docket No. 2007-0346 regarding HECO's application For Approval of a Biodiesel Supply Contract with Imperium Services, LLC, and to include Contract Costs in HECO's Energy Cost Adjustment Clause ("Decision and Order").

The Stipulation between Hawaiian Electric Company, Inc. ("HECO"), the Division of Consumer Advocacy of the Department of Commerce and Consumer Affairs, and the Department of Defense establishes that the costs related to the Campbell Industrial Park Combustion Turbine Unit 1 ("CIP CT-1") are utilized to determine the revenue increase and revenue requirement for the HECO 2009 test year rate base. Stipulation, Exhibit 1, at 1.

Subsequent to the Stipulation, the Commission issued the referenced Decision and Order, which denied HECO's request to approve the Amended Contract[1] between Imperium and HECO. The Decision and Order also reminded HECO "that it cannot operate [CIP] CT-1 using a fuel other than 100% biofuels, absent prior approval of the commission." Decision and Order, at 5 n.9.

In light of the above, please indicate whether you expect that CIP CT-1 will be used and useful in the 2009 test year and fully explain the basis for your position.

Hawaiian Electric Response:

The Hawaii statutory standard for including a generating unit in rate base is whether it is actually used or useful for public utility purposes. In this case, Campbell Industrial Park Combustion Turbine Unit No. 1 ("CIP CT-1" or "CT-1") is both used and useful, and has been since it was placed in service on August 3, 2009.

CIP CT-1 is fully operational, is connected to the grid, and can be operated to serve load

[1] On October 18, 2007, HECO filed an application seeking, among other things, commission approval of a contract between HECO and Imperium Services, LLC ("Imperium") for a biodiesel supply for CIP CT-1. Under cover of a letter dated January 30, 2009, HECO filed, among other things, Amendment No. 1 to Biodiesel Supply Contract Between Hawaiian Electric Company, Inc. and Imperium Services, LLC and Assignment to Imperium Grays Harbor, LLC ("Amended Contract").

when needed. Nonetheless, in keeping with the Commission's directives, the unit will not be operated on a regular basis until all necessary approvals have been received to burn biofuels, and biofuel has been delivered to Hawaii.

Hawaiian Electric is working expeditiously to acquire the needed biofuels and to follow the permit process set forth in the decision and order in Docket No. 05-0145. Once testing is complete (including remedying any punchlist items), and until those biofuels are obtained to complete the air permit testing, CIP CT-1 will be held in standby, and operated only under designated emergency conditions.

Under prior Commission decisions in Hawaii, and in accordance with regulatory commission decisions in other jurisdictions, the generating unit is "used and useful." Moreover, even if it could not currently be operated, even under emergency conditions, CIP CT-1 could be deemed to be Property Held for Future Use, and included in rate base.

Each of these factual and legal points is addressed below:

The CIP CT-1 Generating Unit is in Service

The Campbell Industrial Park Generating Station and Transmission Addition Projects ("CIP CT-1 Projects") include (1) the construction of a new generating facility (including the acquisition of a nominal 100 MW simple-cycle combustion turbine generator and related equipment and auxiliary facilities) (CT-1), (2) an approximately two-mile long 138 kV transmission line ("Transmission Line Project"), (3) expansion of Hawaiian Electric's existing Barbers Point Tank Farm site , (4) substation upgrades for the AES substation, Campbell Estate Industrial Park ("CEIP") Substation and Kahe Substation ("Substation Upgrades"), and (5) auxiliary equipment and facilities related to the foregoing.

Project components that were already placed in service as of the date of filing the supplemental testimonies (July 20, 2009) included:

- AES Substation (P0001051) – April 9, 2009
- CEIP Substation (P0001052) – April 22, 2009
- CIP Land (P0001084) – November 28, 2008
- Microwave Communications (P0001135) – June 3, 2009
- Kalaeloa Relays (P0001137) – April 1, 2009

The estimated in-service dates for the remaining components were as follows:

- Generating Station (P4900000) – July 31, 2009
- Transmission Line (P0001050) – July 27, 2009
- Fiber Communication (P0001134) – July 27, 2009
- Kahe Breakers (P0001136) – August 31, 2009

The combustion turbine-generator was completed and placed in service (i.e., tied into the electrical grid and producing power) on August 3, 2009. The transmission line and fiber communication components were completed as scheduled on July 27, 2009, and the Kahe breakers work was completed on October 1, 2009.

For the generating station component, there are two subcomponent systems that were not completed as of August 3, 2009. These two subcomponents are the blackstart generators and the water treatment system. It is anticipated that the blackstart generators component will be ready for commercial operation by the end of November 2009 (estimated cost $3,000,000). The water treatment system component is scheduled to be completed by the end of December 2009 (estimated cost $6,500,000).[2]

The later in-service dates for these subcomponents do not affect the operation of the remaining portions of this component. The blackstart generators are only needed in the event of

[2] Hawaiian Electric will notify the Commission when each of these two subcomponents is completed and placed in-service.

an island-wide blackout. Thus, the CIP generating station will not have blackstart capability until the blackstart generators go into service, but otherwise the generating station can operate as normal. Until the water treatment system is in service, demineralized water needs at the generating station will be satisfied by trucking in water from one of the nearby independent power producers or from other Hawaiian Electric generating stations.

Although the CIP CT-1 has been placed in service and is fully capable of serving customer load, Hawaiian Electric is still in the process of obtaining biofuel supplies for the unit.

Until proper approvals and permits are received to operate CIP CT-1 on biofuels and biofuels are available, the unit will not be operated to serve customer load except pursuant to the Commission's orders or instructions. Once biofuel test burn data is available, Hawaiian Electric will submit a permit modification application to the State of Hawaii, Department of Health ("DOH") using the data to authorize using biodiesel as a fuel, in conformance with the joint stipulation ("Joint Stipulation") submitted as Exhibit A to the Joint Motion For Approval of Stipulation filed by Hawaiian Electric and the Consumer Advocate on December 4, 2006 in Docket No. 05-0145, and accepted by the Commission in its final order. (In parallel, Hawaiian Electric has submitted a permit modification application to the DOH, which among other things, establishes a mechanism allowing more operational flexibility, including addressing scenarios with different biofuel feedstocks, e.g., if market availability or cost considerations were to require switching from one type of biofuel to another on relatively short notice.) In that accepted stipulation, it was also agreed that while the permit modification application is pending, the unit will be run on low sulfur diesel. Once the amended air permit is received, the unit will be

running on biodiesel, except under limited emergency circumstances in which biodiesel is unavailable, as discussed in the "Emergency Use of CIP CT-1" section below.

Use of Biofuel in CIP CT-1

As outlined in previous testimonies submitted in Dockets Nos. 05-0145 and 2007-0346, CT-1 has an air permit from the DOH and the Environmental Protection Agency ("EPA"), to be operated using naphtha or diesel.[3] As explained in previous dockets, Hawaiian Electric will start up and run the performance guarantee tests for CT-1 using petroleum diesel.

In the CIP CT-1 docket, Docket No. 05-0145, the Consumer Advocate recommended,[4] and Hawaiian Electric agreed, to fuel the new generating unit using 100% biofuel. The Commission agreed that burning biofuel is preferable to fossil fuels and approved its use according to the Joint Stipulation, subject to the Commission's approval of the specific fuel purchase contract for the biofuel.

In Hawaiian Electric's Joint Stipulation with the Consumer Advocate, Hawaiian Electric agreed to an aggressive implementation of the process to run the CT-1 unit on 100% biofuel and outlined the steps that it would take to establish a biofuel supply and secure the necessary permit modifications to allow the use of biofuel in the new generating unit:

> Because the emissions data does not currently exist for biofuels and in order to ensure that ratepayer funds are spent effectively and wisely, Hawaiian Electric will implement the following process:

[3] The unit was designed to burn clean fuels with low air emissions, like naphtha or diesel, but included provisions to allow burning of biofuels, such as ethanol, when they become commercially viable.

[4] The Consumer Advocate did not object to the commitment of funds for the project, provided the combustion turbine used 100% biofuels. The Consumer Advocate recommended that Hawaiian Electric be required to use ethanol or some other biodiesel fuel, as opposed to naphtha, for the generating unit, and that Hawaiian Electric be required to work with the Department of Business, Economic Development & Tourism to develop a local resource for biofuels. CA-T-1, filed August 17, 2006 in Docket No. 05-0145.

(1) In general, the CT unit will go through acceptance testing using naphtha or low sulfur diesel in order to ensure that the CT Unit meets contract specifications and air permit requirements.

(2) Following acceptance of the CT Unit, Hawaiian Electric will request DOH's approval to conduct testing at different loads using the chosen biofuel for which a supply contract has been executed, and to gather the emissions data needed to modify the air permit. After emissions data is collected using samples of the selected biofuel (i.e., biodiesel or ethanol), HECO will seek to modify the air permit to also allow 100% use of that biofuel. This entire process of collecting emissions data and modifying the permit could take up to 6 months depending on DOH requirements.

(3) Following the air permit modification, the unit will then be run by burning biofuel (100%).

Exhibit A to the Joint Stipulation.

In its Decision and Order filed August 5, 2009 ("August 5, 2009 D&O") in Docket No. 2007-0346, the Commission notes that its order approving the stipulation requires Hawaiian Electric to operate CT-1 using only 100% biofuel, and "reminds HECO that it cannot operate CT-1 using a fuel other than 100% biofuels, absent prior approval of the commission." Id., citing Decision and Order No. 23457 at 2.

The Joint Stipulation contemplated that there would be some delays in being able to burn 100% biofuel in the new generating unit. Because burning 100% biofuel in the Siemens SGT6-3000E CT has never been done before, there is no available emissions data using the type of biofuel planned to be used. This data is required to be submitted for approval of an air permit modification. The unit has been commissioned using petroleum diesel. Once all performance tests are deemed complete, the plan outlined in previous testimonies in Dockets Nos. 05-0145 and 2007-0346 is to then burn biodiesel, obtain the emissions data, submit a request for the air permit modification along with the data, and to work with DOH and EPA to obtain approvals of

the permit modifications needed to use biodiesel as the normal fuel supply. This process was anticipated to take approximately up to six months.

Once biofuel test burn data is available, HECO will submit a permit modification application using the data to authorize using biodiesel as a fuel, in conformance with the Joint Stipulation. In parallel, HECO has submitted a permit modification application, which among other things, establishes a mechanism allowing more operational flexibility, including addressing scenarios with different biofuel feedstocks, e.g., if market availability or cost considerations were to require switching from one type of biofuel to another on relatively short notice. The proposal is expected to provide a long-term support for biofueling, in that it would allow for a more streamlined method to obtain DOH authorization for use of alternative biofuels in the future. Specifically, under the recently submitted permit modification application, a significant modification would not be necessary each time a different biofuel is used so long as the DOH determines that the biofuel meets requirements that will be established in advance through this modification. This modified process would not allow for any fossil fuel use as part of the modification.

It was also recognized that there could be other events that could delay the use of biodiesel in the new generating unit, including (1) an interruption of biodiesel supply, and (2) to allow Siemens a cure period to remedy any performance deficiencies.[5] These potential issues were contemplated in the Joint Stipulation by the provision stating that: "If there is an interruption of the biofuel supply or an emergency or operational problem that would affect the

[5] As stated on page 11 of HECO ST-17E, if CIP CT-1 does not meet performance guarantees during acceptance testing then Siemens has up to nine months to address those performance issues. If Hawaiian Electric uses biodiesel to operate CIP CT-1 prior to Siemens demonstrating achievement of the performance guarantees, then the performance guarantees shall automatically be deemed to have been met (regardless of actual performance).

use of the CT Unit, Hawaiian Electric will work with the Consumer Advocate and the Commission to attempt to address such contingencies."

Acquisition of Biofuel for CIP CT-1

On December 27, 2006, Hawaiian Electric issued a New Capacity Biofuel Supply Request for Proposals ("Original RFP"). Hawaiian Electric received seven proposals in response to its RFP. Hawaiian Electric hired Black and Veatch Corporation ("Black and Veatch") to evaluate and provide guidance on the proposals. Based on Black and Veatch's recommendations, Hawaiian Electric entered into negotiations with Imperium Services, LLC ("Imperium"), which resulted in a contract between Hawaiian Electric and Imperium for a biodiesel fuel supply for CT-1 ("Original Contract").

On October 18, 2007, Hawaiian Electric filed its Application in Docket No. 2007-0346 seeking Commission approval of the Original Contract.

On January 30, 2009, Hawaiian Electric filed Amendment No. 1 to Biodiesel Supply Contract Between Hawaiian Electric Company, Inc. and Imperium Services, LLC and Assignment to Imperium Grays Harbor, LLC. ("Amendment"). On February 6, 2009, Hawaiian Electric filed the Biodiesel Terminalling and Trucking Agreement ("TTA") with Aloha Petroleum, Ltd. (the Amendment and the TTA collectively referred to as "Amended Contract").

In the August 5, 2009 D&O, the Commission denied approval of the amended contract noting, "in general, that the terms of the Amended Contract are substantially less favorable to HECO (and therefore its ratepayers) in price, risk, scope, and additional costs than the Original Contract due to the new point of delivery of fuel."

In response to the Commission's decision, Hawaiian Electric has expeditiously reissued requests for proposals for biodiesel.

To acquire the biodiesel for the biodiesel emissions data project, Hawaiian Electric issued a Request for Proposal Biodiesel Supply Contract ("RFP") on August 14, 2009. Eight proposals were received by Hawaiian Electric in response to the RFP.

After its evaluation of the proposals, Hawaiian Electric entered into comprehensive negotiations with the successful bidder, REG Marketing and Logistics, LLC ("REG"). On October 1, 2009, Hawaiian Electric executed a contract with REG ("Biodiesel Supply Contract"). The Biodiesel Supply Contract is for approximately 400,000 gallons, the amount of biodiesel estimated by Hawaiian Electric required to conduct testing for the biodiesel emissions data project. REG must deliver the biodiesel using 5,800 gallon (minimum) intermodal containers manufactured to International Organization for Standardization ("ISO") specifications, known as "ISO containers," on a suitable container chassis to Hawaiian Electric's CIP Facility. Fuel will be directly discharged from the ISO containers into one of the two fuel storage tanks at the CIP Facility.

The Biodiesel Supply Contract requires that the feedstock used to produce the biodiesel supplied to Hawaiian Electric be exclusively derived from yellow grease (recycled cooking oil) and/or animal waste fat products. Hawaiian Electric has a joint understanding with the National Resources Defense Council ("NRDC") that yellow grease and animal fat waste products as a source of biodiesel feedstock are not covered by the HECO-NRDC Environmental Policy for Sustainable Procurement of Biodiesel for agriculturally grown feedstocks. It is NRDC's view however that yellow grease and animal fat waste products feedstocks generally represent a

positive environmental approach for the manufacture of biodiesel as they are both waste products from existing commercial or industrial operations.

Hawaiian Electric anticipates that approximately 10 weeks are needed to receive the biodiesel from the date biodiesel is ordered under the Biodiesel Supply Contract. This ten-week period provides adequate lead time for REG to manufacture the biodiesel and for transportation of the biodiesel to Hawaiian Electric's CIP Facility. Hawaiian Electric would like to conduct the biodiesel emissions data project in the December 2009 timeframe in order to begin biodiesel operations in 2010.

On October 2, 2009, Hawaiian Electric filed an application in Docket No. 2009-0296 requesting Commission approval of a one-time purchase of a supply of approximately 400,000 net U.S. gallons of biodiesel through the Biodiesel Supply Contract, and approval for the inclusion of the costs of the Biodiesel Supply Contract, including without limitation, the costs associated with the biodiesel, transportation, and related taxes, in Hawaiian Electric's Energy Cost Adjustment Clause ("ECAC") to the extent that the costs are not recovered in Applicant's base rates.

In addition, while Hawaiian Electric is willing to use 100% biodiesel in CIP CT-1, Hawaiian Electric also requested that the Commission allow Hawaiian Electric to use B99 biodiesel blended with no more than 1% petroleum diesel (in addition to 100% biodiesel) in order to benefit from the Federal biofuel blenders' tax credit, currently $1.00 for each gallon of biodiesel mixture. The Biodiesel Supply Contract factors in the Federal biofuel blenders' tax credit in a manner that, in effect, will pass the credit on to Hawaiian Electric's customers.

Based on the Biodiesel Supply Contract lead time of ten weeks to receive biodiesel, Hawaiian Electric stated in the Application in Docket No. 2009-0296 that Hawaiian Electric may commit to the Biodiesel Supply Contract and burn biodiesel prior to Commission approval for the purposes of conducting the biodiesel emissions data project. Hawaiian Electric acknowledges that incurring the costs prior to Commission approval has some risks but given the need to facilitate biodiesel testing of CIP CT-1, Hawaiian Electric has respectfully requested that, if the Commission approves the Biodiesel Supply Contract, the Commission allow all costs incurred to date for the biodiesel contract, to the extent that such costs are not recovered Hawaiian Electric's base rates, to be deferred and allow such costs to be recovered through the ECAC, pursuant to Section 6-60-6 of the Hawaii Administrative Rules. On October 6, 2009, Hawaiian Electric placed the order with REG for the biodiesel under the Biodiesel Supply Contract.

Upon receipt of the biodiesel, testing on CIP CT-1 is estimated to take up to one month.

1. Biodiesel emissions tuning: (Approximately one week)

   Operate CIP CT-1 from start-up to base load with water injection. This process is needed to: (1) determine the optimum water to fuel ratio to maintain emissions within the air permit limits while burning biodiesel, (2) ensure that this water to fuel ratio will not cause any undue wear and tear on the unit, and (3) record operational parameters. In the event that the test is halted due to operational issues, the test must be restarted until the test is completed in a continuous time period.

2. Biodiesel Test Burn: (Approximately one week)

   Operate CIP CT-1 from start-up to base load with water injection in order to conduct stack emissions testing at minimum, 50%, 75% and 90-100% of peak load.

3. Biodiesel Operational Testing: (Approximately one week)

Operate CIP CT-1 with the finalized operation parameters to test the reliability of the unit on biodiesel.

In anticipation of the need for biodiesel to operate CIP CT-1 on an on-going basis, Hawaiian Electric also issued its RFP for a two-year supply on August 14, 2009. The RFP requests proposals for the supply and delivery of 3 million to 7 million gallons of biodiesel per year for a term of two years from the contract effective date as subject to Commission approval. Seven proposals were received by Hawaiian Electric in response to the RFP for a two year supply of biodiesel.

Hawaiian Electric will begin evaluating proposals submitted in response to the RFP that were received by the RFP deadline. Hawaiian Electric expects the evaluation and negotiation of a contract to take up to approximately 45 days. It is estimated that, by November 16, 2009 Hawaiian Electric will have awarded a biodiesel supply contract for the two year operational supply of biodiesel. Subsequently, Hawaiian Electric is targeting to submit a proposed contract to the Commission by November 20, 2009. Bids that for any reason will not allow Hawaiian Electric to meet its desired time objectives will likely be rejected.

The criteria, evaluation, and methodology used in reviewing and evaluating the proposals to select a supplier will be similar to those established in the Biodiesel Supply Contract for 400,000 gallon test volume selection process. Because the test volume is a one-time purchase of a relatively small volume of biodiesel, there is less risk in the Biodiesel Supply Contract for test volume than the risk that will be inherent in assuring a secure biodiesel supply for operational volume requirements. Therefore, evaluation of the two year biodiesel proposals will be more comprehensive than that of the test volume proposals. From this evaluation, Hawaiian Electric expects to enter into comprehensive negotiations with the highest scoring bidder with the goal of

completing a biodiesel supply contract for the two year operational biodiesel supply by November 16, 2009.

Hawaiian Electric understands the Commission's concern, in the wake of the rejection of the Imperium contract, that the Company was not in a position to comply with a key element of the approval of CT-1; a viable supply of biofuels.

Hawaiian Electric believes that the foregoing demonstrates that supplies of biofuels are available and that the appropriate commitments to obtain them have been met. The Company took to heart the lessons learned in the Imperium case and the current biofuels arrangements can be regarded as real and as viable. Furthermore, by taking the risk of purchasing the initial supply without Commission approval, the Company is fully demonstrating its commitment to meeting the conditions of the order authorizing CT-1. Stated otherwise, to the extent that the Commission was saying that a "used and useful CT-1" needed to be seen as a "used and useful biofueled CT-1," the Company is making clear its compliance with the full condition that went with the approval of CT-1.

Emergency Use of CIP CT-1

As noted above, Hawaiian Electric "cannot operate CT-1 using a fuel other than 100% biofuels, absent prior approval of the commission." Moreover, in accordance with the Joint Stipulation, if there is a need to operate the unit in the absence of a biofuel supply in an emergency situation, "Hawaiian Electric will work with the Consumer Advocate and the Commission to attempt to address such contingencies."

Given the current situation, Hawaiian Electric submitted a proposal to the Commission and the Consumer Advocate by letter dated September 16, 2009, in order to identify the limited,

emergency circumstances under which CIP CT-1 would be operated at this time (for the purpose of serving load). The proposal was developed in recognition that natural disasters and other catastrophic events could impact the Company's electric system at any time, and that preparation and planning for emergencies are necessary to fulfill its commitment to provide reliable service to its customers.

In particular, Hawaiian Electric proposed to call on CIP CT-1 as a last resort generation resource to mitigate spinning reserve and generation capacity shortfall situations that have a high potential to lead to or have already led to load shedding and island wide blackouts. The CIP CT-1 unit is particularly effective under these circumstances, given its black-start capability, which (1) provides an additional resource to address an island-wide blackout situation, and (2) has a faster start-up feature which can then be used to more quickly restart the other units on the system.

Based on its review, the Consumer Advocate notified the Commission and Hawaiian Electric by letter dated September 30, 2009 that it does not object to Hawaiian Electric's request to utilize CIP CT-1 on a limited basis under the emergency conditions, provided that the Commission and the Consumer Advocate are notified of such use during Gen Con 1, 2, 3, or 4.[6]

In its letter, the Consumer Advocate noted that:

> The Consumer Advocate notes that forecasting is not an exact science and actual loads may exceed forecast values such that reserve capacity shortfalls may be experienced even in the years 2010 and 2011. In fact, the Consumer Advocate notes that the recorded peak load as of 2009 to-date for HECO's system was 1,220 MW (higher than the May 2009 S&P for the years 2009 through 2013),

[6] Hawaiian Electric uses Generation Condition ("Gen Con") levels to characterize the amount of excess or shortfall of spinning reserves available at any given time. Use of these levels to describe the state of the system helps to facilitate contingency planning efforts in the event of spinning reserve or generation capacity shortfalls. The table in Attachment 1 to this IR response defines each Gen Con level and describes the general state of the system at those levels.

which would result in a much higher reserve capacity shortfall for even the year 2009.

As such, the Consumer Advocate believes that allowing the Company to utilize CIP CT-1 under the emergency conditions set forth in the September 16, 2009 letter will provide the Company with sufficient generation capacity on its system to mitigate concerns where: (1) spinning reserve is anticipated to be limited; and (2) there are immediate concerns with spinning reserve shortfall or insufficient generation to meet load requirements. As outlined in Docket No. 05-0145, CIP CT-1 is a unit, especially with its black start capabilities, that will be instrumental in addressing the possibilities of generation capacity shortfalls and/or the possibilities of an outage. Thus, with the understanding that HECO will utilize a notification procedure where it notifies the appropriate personnel from the Commission and Consumer Advocate, rather than seek approval in certain circumstances, the Consumer Advocate does not object to the Commission granting the requested authority.[7]

Hawaiian Electric has been informed by the Commission that case-by-case approvals for emergency use of the CT-1 are not required. However, the Company is required to submit written notification to the Commission and the Consumer Advocate within 3 days after CT-1 is used for the emergency purposes described in the previous paragraphs; i.e., when the system is in Gen Con 1, 2, 3 or 4 situations.

CIP CT-1 is Used and Useful

CIP CT-1 was installed as expeditiously as possible, in order to address the reserve capacity shortfall situation that has existed since 2006.[8] The unit is now installed, is connected to the grid, and is available to provide electricity to Hawaiian Electric's customers.

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[7] Footnotes omitted.

[8] Given the urgent need, Hawaiian Electric also took a number of steps to mitigate the effects of reserve capacity shortfalls, such as (1) installing temporary, limited run-hour distributed generators at substations or other sites, (2) implementing additional load management and other demand reduction measures, (3) pursuing efforts to improve the availability of generating units, (4) negotiating and obtaining approval of the Kalaeloa amendments adding 28 MW of firm capacity in 2005, and (5) permitting and designing the CIP CT-1 so that it could be installed in 2009.

Hawaiian Electric presented its testimonies on the need for CIP CT-1 in Docket No. 05-0145 on April 18, 2006 and September 28, 2006.[9] Those testimonies demonstrated that additional firm capacity was already needed at that time to address the reserve capacity shortfall situation identified in its annual Adequacy of Supply ("AOS") report filed March 31, 2004. However, because of the long lead times that it takes to permit and install new generation, Hawaiian Electric anticipated that the soonest the project could be placed into service was July 2009. See Attachment 2 to this IR response.

The Commission approved the commitment of expenditures for the CIP CT-1 Projects in Decision and Order No. 23457 ("D&O 23457"), issued May 23, 2007. In D&O 23457 the Commission explicitly recognized the "dire need" for the project:

> Pursuant to G.O. No. 7, and after careful consideration and review of the entire record in this proceeding, the commission finds that the Project, as set forth in HECO's and the Consumer Advocate's Joint Stipulation, is reasonable and in the public interest. The commission first recognizes the dire need for additional generation due to the reserve capacity shortfall faced by HECO in recent years. In fact, as stated above, all Parties agree that additional generation is needed on HECO's system. The commission also finds that the need is immediate, and that the Project must be installed by July 2009 or as early as possible, as requested by HECO.

D&O 23457 at 42-43.

Given its obligation to serve, Hawaiian Electric expended substantial funds in order to bring the CIP CT-1 Project on-line as soon as possible. The Hawaii Public Utilities Commission has described the "long-standing regulatory compact" as follows:

> The regulatory compact has two aspects: (1) in return for a monopoly franchise, utilities accept the obligation to serve all comers; and (2) in return for agreeing to commit capital necessary to allow the utilities to meet the obligation, utilities are assured a fair opportunity to earn a reasonable return on the capital prudently

[9] Hawaiian Electric filed its application for approval of the CIP CT-1 Project on June 17, 2005.

> committed to the business. In Wash. Util. and Trans. Comm'n v. Puget Sound Power & Light Co., 62 P.U.R.45th [sic] 557, 581 (1984), the Washington Commission explained the regulatory compact in this fashion:
>
> The social and economic compact of utility regulation begins with the premise that a regulated utility has an obligation to serve the public. [A] utility possesses an unending obligation to provide service to anyone within the service territory of that utility who demands service in accordance with approved tariffs.
>
> However, in order for the social duty to serve to be viable, the compact must also provide for a utility to recover expenses it prudently undertakes to meet the obligation. (Emphasis original.)

Re Citizens Utilities Company, Kauai Electric Division, Docket Nos. 94-0097 & 94-0308, Decision and Order No. 14859 (August 7, 1996) at 13.

Having installed CIP CT-1, with the approval of the Commission, in order to meet its obligation to serve, Hawaiian Electric must be provided with a reasonable opportunity to earn a fair return on its investment in the unit.

An electric utility earns a return on the investment in property added to serve customers in two ways. During the pre-service period, the utility earns an Allowance for Funds Used During Construction ("AFUDC"), which is accrued and added to the capital cost of the project. Once the project is placed in service, the cost of the project is included in rate base, and the utility must be afforded an opportunity to earn a fair return on the cost of the project that is prudently incurred. (The utility also depreciates the cost of the project for ratemaking purposes.)[10]

Capital costs include a fair return on investment (which is referred to as the rate base), and a return of investment (referred to as depreciation). Before capital projects are placed in

[10] For Hawaiian Electric, depreciation begins to accrue for book and ratemaking purposes in the year following the year in which the project is placed in service.

service, the return on investment is recovered through AFUDC. Once capital projects are placed in service, however, the accrual of AFUDC is discontinued.

Under standard ratemaking practices, Hawaiian Electric would be able to begin earning a return on its investment in the project components through an interim rate increase that includes the revenue requirements for the CIP CT-1 Project on an average test year basis (as is reflected in the Parties' Stipulated Settlement Letter, filed on May 15, 2009 in Docket No. 2008-0083), or through an interim step increase when the project components go into service that includes the revenue requirements for the full costs of the CIP CT-1 Project (as Hawaiian Electric proposed in its application in Docket No. 2008-0083). As a result of the Interim Decision and Order issued July 2, 2009, however, Hawaiian Electric does not currently have the opportunity to earn a return on its investment in the CIP CT-1 Project components that have been placed in service.

It is well established that property that services both current and future needs should be included in rate base. Thus, if a utility has taken prudent steps to meet the future needs of its customers in adding new plant, that new plant should be included rate base. There are numerous electric utility examples where the Hawaii Public Utilities Commission, and regulatory commissions in other jurisdictions, have approved the inclusion in rate base of the costs of projects that were installed in logically sized increments, even though all or part of the capacity may not have been needed immediately once it was installed.

The Commission's decision in Hawaiian Electric's 1974 test year rate case is instructive:

> The Staff proposed to disallow in the rate base one-half of the cost of Kahe Generating Unit No. 5, which is scheduled to go into commercial operation in November, 1974, on the grounds that it is excess capacity and will not actually be needed at that time because of the slower rate of growth due to the recent energy crisis. This proposal reduces the rate base by approximately $14,600,000. . . . HECO cited a number of court and commission decisions[1]

> indicating that commissions have included in the rate base excess capacity which has been prudently acquired and the use of which may be anticipated with reasonable precision, even though the plant would not actually be in service by the end of the test year. In the present case, Kahe 5 will actually be in service at the end of the test year. Under all the circumstances, the Commission is of the opinion that the full cost of Kahe 5 must be included in the rate base.
>
> [1] Baltimore Gas & Electric Co. v. People's Counsel, 220 Md. 373, 152 A.2d 825 (1959); Southern New England Tel. Co. vs. Public Util. Comm'n, 29 Conn. Super. 253, 282 A.2d 915, 920 (1970); Re New Haven Water Co., 49 P.U.R. (N.S.) 229 (Conn. P.U.C. 1943); Re Consumers of Edison Electric Illuminating Co. of Boston, 5 P.U.R. (N.S.) 369 (Mass. Dept. of Pub. Util., 1943); Wisconsin Telephone Co. v. Public Service Commission, 30 P.U.R. (N.S.) 65, 287 N.W. 122 (S. Ct. Wis. 1939); Re Consolidated Edison Co. of N.Y., 54 P.U.R.3d (N.Y. Comm 1968); Latourneau v. Citizens Utilities Co., 59 P.U.R.3d 1, 209 A.2d 307 (Vt. S. Ct. 1965).

Re Hawaiian Electric Co., Docket No. 2296, Decision and Order No. 3546 (August 19, 1974) at 5-6.

The Commission reached the same conclusion that it had reached in its 1976 Hawaiian Electric decision in Re Hawaii Electric Light Co., 13 P.U.R.4th 329 (1976):

> Another major difference between the parties was the inclusion in the rate base of the depreciated cost of certain generating plant. The division excluded from the rate base 50 per cent of the depreciated cost of 26 megawatts of generating plant it contended was "least used." Lima Kokua contended that depreciated cost of the 23-megawatt generation plant known as Hill 6, HELCO's newest plant addition should be removed from the rate base.

Id. at 336-37. The Commission rejected the contentions of both the Public Utilities Division ("PUD," now the Consumer Advocate) and Lima Kokua, both of which were predicated on claims that HELCO had excess capacity after adding new generation, because load growth had not materialized due to the "energy crisis." Id. at 337. With respect to the PUD's contention, the Commission concluded:

> After reviewing the evidence in the record on this point, the Commission concludes that these generating units, or so-called "least-used plant", are not excess but were prudently added to the system and are actually used and useful and will be used in the future. Consequently, it appears reasonable that such plant is used and useful for utility purposes within the meaning of §269-16(a) of the Hawaii Revised Statutes and, therefore, has to be included in the rate base.

The common theme in these cases is that (1) the utility had taken prudent steps to meet the future needs of its customers in adding new plant, (2) the plant was actually being used, and (3) the challenged plant will be used in the future.

As explained in S. New England Tel. Co. v. Pub. Util. Comm'n, 29 Conn. Supp. 253, 260, 282 A.2d 915, 919-20 (1970), the norm or standard is set out in 73 C.J.S. Public Utilities § 18, page 1017 in the following language:

> [P]roperty or equipment provided or acquired in anticipation of reasonable future need should be allowed as part of the rate base even though wholly or partially unused at the time to which the inquiry relates. In determining whether excess plant capacity shall be included in the rate base, a utility must have some latitude with respect to plant enlargement undertaken to meet the requirement imposed on it to furnish service when and as demanded by the public, and, while the utility must bear the burden of an unreasonable extension of its plant and the risk that portions of it prudently acquired may become obsolete or not useful, it should not be penalized for failure exactly to anticipate future demands for service in a period of depression.

A detailed discussion of the foregoing standard is set forth in Cent. La. Elec. Co. v. La. Pub. Serv. Comm'n, 508 So. 2d 1361 (1987),[11] wherein the Supreme Court of Louisiana found the Louisiana Public Service Commission's ("LPSC") denial of a $51.7 million rate increase (primarily associated with inclusion in Central Louisiana Electric Company's ("CLECO") rate base of CLECO's one-half interest in a 640 MW generating plant) to be "unreasonable, arbitrary and confiscatory . . . ." Id. at 1371. In the CLECO case, the LPSC argued that "CLECO should

[11] See also Idaho Underground Water Users Ass'n v. Idaho Power Co., 89 Idaho 147, 161, 404 P.2d 859, 867 (1965); Pac. Tel. & Telegraph Co. v. Wallace, 158 Or. 210, 232, 75 P.2d 942, 952 (1938).

bear the cost of 'overcapacity' created by" the generating plant, and stated in its order that "[w]e do not believe it to be unreasonable for the Company and its stockholders to bear or at least share in the costs of overcapacity during such economic times." Id. at 1367.

The Supreme Court of Louisiana disagreed, stating that "[t]he real issue, however, is not overcapacity, but rather whether or not [the plant] is 'used and useful' in rendering utility service. If [the plant] is 'used and useful,' then it belongs in the rate base." Id. In its analysis, the Louisiana court explained that "[t]he 'used and useful' determination consists of two components: (1) in service, and (2) reasonably necessary." Id. (citing City of Evansville v. S. Ind. Gas & Elec. Co., 167 Ind. App. 472, 339 N.E.2d 562, 570 (1975)). With respect to the "reasonably necessary" requirement, the court stated:

> [O]vercapacity, of course, does not appear to satisfy it. Overcapacity, however, must be looked at realistically. "As a matter of sound business judgment, utilities must build beyond their immediate needs. If their investments are provident and are made both in good faith and in the best interests of the area served, they plainly belong in the rate base." Priest at 181.
>
> In Latourneau v. Citizens Utilities Co., 125 Vt. 38, 209 A.2d 307 (1965), the Supreme Court of Vermont held it was erroneous for the Commission to have excluded part of the construction costs of a fully constructed transmission line which provided excess capacity. The court observed the utility's decision to construct the facility was prompted by a need to supplement the existing facilities. Although there was disagreement as to exactly when the facilities would be used at full capacity, it was undisputed that such use would occur during the useful life of the transmission line. Further, there was no indication that poor business judgment had been employed in constructing the line. The court remarked "[m]anagement must plan for the future to meet the demands of the people for additional service. Construction to meet such demand cannot be started one day and completed the next." Id. at 313.
>
> Property or equipment provided or acquired in anticipation of reasonable future need should be allowed as part of the rate base even though wholly or partially unused at the time to which the inquiry relates. In determining whether excess plant capacity shall be included in the rate base, a utility must have some latitude with respect to plant enlargement undertaken to meet the requirement imposed on it to furnish service when and as demanded by the public, and, while the utility

> must bear the burden of an unreasonable extension of its plant and the risk that portions of it prudently acquired may become obsolete or not useful, it should not be penalized for failure exactly to anticipate future demands for service in a period of depression. Idaho Underground Wat. US. Ass'n v. Idaho Power Co., [89 Idaho 147] 404 P.2d 859, 867 (Idaho 1965), citing C.J.S. Public Utilities § 18a, p. 1017.
>
> The long term best interests of ratepayers is not promoted by penalizing utilities for excess capacity via rate base exclusions or by denying the company a return on a completed facility while simultaneously taking full advantage of its operating efficiency. Berlin, Excess Capacity, Plant Abandonments, and Prudent Management, 114 Pub. Util. Fort. 26, 29 (Nov. 22, 1984).

Cent. La. Elec. Co., 508 So. 2d at 1368 (footnotes omitted).

Similarly, in Kan. Gas and Elec. Co. v. State Corp. Comm'n, 218 Kan. 670, 544 P.2d 1396 (1976), the Supreme Court of Kansas found an order of the State Corporation Commission ("SCC") to be unlawful where the SCC denied an application of Kansas Gas and Electric Company ("KGEC") to include the entire value of a generation plant in rate base, on the grounds that the plant was not capable of operating at full capacity. In the KGEC case, the SCC found that although a certain KGEC electric generation plant was in "significant use," the plant was not "required to be used," and thus excluded from rate base one-third of the value of KGEC's interest in the plant.[12]

On appeal, a Kansas district court held that, " . . . [A] generating plant is a unit and it is either used or required to be used, or not used or not required to be used, and therefore it should be included in full or excluded in full . . . ." Id. at 672, 544 P.2d at 1398. Citing 73 C.J.S. Public

[12] In determining the property to be included in the rate base of a public utility under the provisions of K.S.A. 66-128, the question whether property is used or required to be used is one of fact to be determined by the State Corporation Commission. If the property is found either used or required to be used it is to be included in the rate base. Kan. Gas & Elec. Co. v. State Corp. Comm'n, 218 Kan. 670, 670, 544 P.2d 1396, 1397 (1976).

The tenor of the SCC's findings had been that the plant, due to mechanical problems arising from the antipollution control system, was operating at a low percentage of capacity during the time interval in question and, thus, only two-thirds of the reasonable value thereof should be included in the rate base. See id. at 674, 544 P.2d at 1400.

Utilities § 18, the Supreme Court of Kansas affirmed the district court's ruling, and further noted that:

> The statute prescribes a two-phase duty of the commission; first, to determine the property of a utility used or required to be used in its services to the public; and, second, to ascertain the reasonable value of such property whenever it deems the ascertainment of such value necessary in order to fix fair and reasonable rates. We discern nothing in the statute which authorizes the commission to determine that a certain facility is partially used or required to be used and partially not. If the legislature had so intended, it would have been a simple matter to include in the statute such words as 'or whatever fraction or percentage of such property is used or required to be used.' This is not to say that a unit or segment of a facility that has become obsolete or whose production is far in excess of present or near future needs, or for any valid reason, is not used or required to be used and can be setoff or separated from a facility otherwise used, cannot be excluded from rate base under the statute. But that is not the case here.

Id. at 674, 544 P.2d at 1400.

The holdings in the Hawaii Commission cases are consistent with the holdings in cases from other jurisdictions. See, e.g., Re Pac. Power & Light Co., 63 P.U.R.4th 642 (Or. PUC 1984).

"It is in the nature of things that projections of future circumstances are rarely precise. This is especially the case in the area of electric utility reliability where underestimations of needed reserves could spell disaster." Re S. Cal. Edison Co., 1977 F.P.C. LEXIS 67, 23 P.U.R.4th 44 (1977) at *25. "[I]t would certainly be unreasonable to expect that any electric utility would have the forecasting capability to predict the level of capacity necessary to precisely satisfy [the used and useful] standard, or the flexibility, considering the extensive lead time involved, to construct additional capacity in the exact increments necessary to meet it. Hindsight is always perfect and before the Commission will consider denying a return on property actually used in providing service something more need be shown than that the

company's foresight was not." Re Columbus & S. Ohio Elec. Co., 1978 Ohio PUC LEXIS 3 (Ohio PUC 1978) at *41-42.

HRS §269-16(b)(3) provides that rates fixed by the Commission be "just and reasonable, and provide a fair return on the property of the utility actually used or useful for public utility purposes." The statutory language does not require that utility plant actually be in service or produce the maximum amount of electricity.

In the context of electric utilities, generation held for reserve, standby or emergency capacity has been deemed to be used and useful for utility purposes. For example, in Re Detroit Edison Co., 1980 Mich. PSC LEXIS 1077, 35 P.U.R.4th 429 (1980), the Michigan Public Service Commission ("PSC") allowed an electric utility to include in plant-in-service property held "in an emergency standby posture" based on (1) a finding that "the costs associated with maintaining [the generating plant] on 'economy reserve' are not as high as the benefits which might accrue should an emergency of a continuing nature arise"; and (2) the commission's belief "that this is a reasonable hedge against construction schedules and forecasting errors and find[ing] that the [generating plant] should not be removed from plant-in-service." Id. at *22. The Michigan PSC added that in considering whether plant is used and useful, "catchwords and catchy phrases can be misleading if common sense is not used when applying them to the facts of a case like this. The rationale behind the 'used and useful' standard is to avoid allowing a utility to earn a return on property which is not being utilized toward the ultimate goal of providing service to utility customers." Id.

Similarly, in Re Fla. Power and Light Co., Docket No. 820097-EU (CR), Order No. 11437 (1982), the Florida PSC allowed an electric utility to retain in property held for future

use[13] the net utility plant associated with its two remaining cold standby units at a cost of $61,617,000 "until such time as the decision to place them in cold standby is demonstrated to be imprudent." Id. at 34.

Standby generation has also been included in rate base despite a government mandate banning the use of such equipment. Such was the case in Re Cleveland Elec. Illuminating Co., 1973 Ohio PUC LEXIS 1 (1973), wherein the Ohio PUC permitted standby coal equipment to be included in rate base even though the federal Environmental Protection Agency had in effect ordered the equipment out of service. The Ohio PUC's decision in that case noted that: (1) "the President of the United States has urged delay of changeovers from coal to oil fired equipment and in fact federal legislation requiring change back to coal during the energy crisis is currently under active consideration by congress," and (2) there was a "very real probability that coal operations may resume." Id. at *15-16.

Property Held for Future Use

In Hawaii, "The Commission is of the opinion that by the very nature of the utility business, property must be acquired in advance of actual use in order that the planning, design, and construction of various plants be done on an orderly fashion." Re Maui Electric Co., Docket No. 4156, Decision and Order No. 6953 (January 15, 1982) at 44. Accordingly, a utility may include in its rate base property held for future use, which the Commission has described as "property owned by HECO and held for future utility purposes. It represents HECO's investment in sites needed to provide electric service in the future." Re Hawaiian Electric Co., Docket No. 04-0113, Decision and Order No. 24171 (May 1, 2008) at 59.

[13] "Property held for future use" is discussed below.

As defined in the NARUC Uniform System of Accounts, "Property Held for Future Use" is a balance sheet account (account no. 105) that includes the original cost of property owned and held for future use in utility service under a definite plan for such use. The account includes: (1) "property acquired but never used by the utility in utility service, but held for such service in the future under a definite plan"; and (2) "property previously used by the utility in utility service, but retired from such service and held pending its reuse in the future, under a definite plan, in utility service."[14] However, "materials and supplies, meters and transformers held in reserve, and normal spare capacity of plant in service" are not included in this account.

Courts have emphasized the nature of the inquiry which must be made by a commission with respect to property held for future use. For example, in Petition of New England Tel. & Telegraph Co., 115 Vt. 494, 506, 66 A.2d 135, 143 (1949) the court stated:

> In making this determination it should consider whether the purchase of the property in question was made in pursuance of honest and reasonable business judgment in carrying out some definite plan, for example, or whether the expenditure was dishonest, wasteful or imprudent. The time within which it may reasonably be expected that the property will be used is, as we have indicated, very important in determining the question.

In addition, "Such property may be included in the rate base if the regulatory body determines that its acquisition was reasonably necessary and its use may be anticipated with reasonable precision, or if, it has sometimes been held, the property is likely to be placed in

[14] NARUC's guidelines regarding property held for future also provide rules for situations where: (1) property held in this account ceases to be needed or appropriate for future utility operations; and (2) the utility experiences gains or losses from the disposition of property held in this account. In addition, per NARUC's guidelines, property held for future use is classified according to the detailed accounts prescribed for utility plant in service, and the account is maintained in such detail as though the property were in service. Separate accounts are required to be maintained for each utility department for which plant is held for future use. Under NARUC's guidelines, normally, service life during which depreciation is computed commences with the date the property is includible in utility plant in service. Thus, depreciation would not commence on property held for future use until it is transferred to utility plant in service.

service within the period for which the rates are fixed." Baltimore Gas & Elec. Co. v. McQuaid, 220 Md. 373, 380, 152 A.2d 825, 828-29 (1959).

Conclusion

In conclusion, Hawaiian Electric has demonstrated the following:

1. CT-1 is in fact in use as part of the system today and is therefore "used and useful;"
2. The biofuel supplies are secured and in the process of being secured; and therefore,
3. Hawaiian Electric has met the Commission's intertwined conditions.
4. The unit was installed pursuant to a finding of need which is still the case and even if the conditions are less dire today cannot be rescinded on an after-the-fact basis once the approval was relied upon to build the unit;
5. And in any event, even if not considered plant-in-service, the unit would qualify for treatment as a "property held for future use."

Generation Condition Levels Based on Spinning Reserve

Gen Con Level	Spinning Reserve (MW)	Excess Spinning Reserve (MW)	State of the System
Gen Con Alpha	180MW	XSR[1] > 0	Normal, at least 1 unit on reserve
Gen Con Beta	180MW	XSR > 0	Normal, no standby reserves[2]
Gen Con 1	140MW < SR < 180MW	-40MW[3] < XSR < 0MW	Disturbance, i.e., loss of AES, K5, or K6
Gen Con 2	90MW < SR < 140MW	-90MW[3] <XSR < -40MW	Disturbance, i.e., loss of S7-8, K1-4 in addition to AES, K5, or K6
Gen Con 3	0MW<SR<90MW	-180MW[4]<XSR<-90MW	Disturbance, i.e., loss of any unit
Gen Con 4	SR<0MW	XSR<-180 MW[4]	Underfrequency load shedding or Island-wide blackout

Note 1: "XSR" means Excess Spinning Reserve, which is the amount of generation in excess of the largest generating unit which is typically AES at 180 MW.
Note 2: "No standby reserves" means that no generating units are available for start up.
Note 3: The 40 MW XSR value is based on the difference between AES at 180 MW and a 140 MW reheat unit (K5, K6). The 90 MW XSR value is based on the difference between AES at 180 MW and a 90 MW reheat unit (W7, W8, K1-4).
Note 4: 180 MW is the generation capacity and normal loading of the AES unit on the system. If AES suddenly trips from 180 MW, system frequency will immediately begin to decay. Spinning reserves from all operating generators are used to make up for the sudden loss and arrest the decay in system frequency. If available, additional units are started to help restore system frequency, SR, and QLPU back to normal.

Hawaiian Electric's Current Reserve Capacity Situation

In Hawaiian Electric's 2009 Adequacy of Supply ("AOS") report, submitted to the Commission on February 27, 2009, Hawaiian Electric provided an assessment of its reserve capacity situation under the September 2008 peak demand forecast and with CIP CT-1 in service in Table 8 on page 27 of the report:

Table 8: Reserve Capacity Shortfall for Reference and Planning Scenarios (MW)

		Alternate Scenarios		
Year	Reference Scenario	Two-Month 90 MW Outage	Higher Load (Add 60 MW)	10 yrs/day reliability scenario
2009	-30	-60	-90	-70
2010	50	30	-10	20
2011	30	10	-30	0
2012	10	0	-50	-20
2013	30	0	-30	-10
2014	20	0	-40	-10

(Note: Negative values indicate a shortfall; positive values indicate a surplus)

Under the reference scenario, no reserve capacity shortfalls were projected with CIP CT-1 in service. Under the Higher Load (Add 60 MW) scenario with CIP CT-1 in service, it was projected that a reserve capacity shortfall of 10 MW would be experienced in 2010, with the shortfall increasing to 40 MW in 2014.

For reference, the September 2008 peak demand forecast was as follows:

Year	Net System Peak, MW
2009	1,246
2010	1,243
2011	1,252
2012	1,264
2013	1,296
2014	1,319

In its letter, dated May 6, 2009, to the Commission providing an update to the cost estimate for the Campbell Industrial Park Generating Station and Transmission Addition in Docket No. 05-0145, Hawaiian Electric included Exhibit 2 on the continued need for Campbell Industrial Park Generating Unit CT-1. Table 8A on page 2 in Exhibit 2 provided the results of an analysis of Hawaiian Electric's reserve capacity situation under the September 2008 peak demand forecast if CIP CT-1 were not available. Table 8A is reproduced here:

Table 8A: Reserve Capacity Shortfall for Reference and Planning Scenarios (MW)
Without CIP CT-1

Reserve Capacity for Reference
and Sensitivity Scenarios, MW

Year	Reference Scenario	Alternate Scenarios		
		Two-Month 90 MW Outage	Higher Load (Add 60 MW)	10 yrs/day reliability scenario
2009	-60	-80	-120	-90
2010	-40	-70	-100	-80
2011	-60	-90	-120	-100
2012	-80	-90	-140	-110
2013	-70	-100	-130	-100
2014	-70	-90	-130	-110

(Note: Negative values indicate a shortfall; positive values indicate a surplus)

The analysis indicated that the reserve capacity shortfalls would increase significantly under all scenarios if CIP CT-1 is not available. For example, under the Reference Scenario, the reserve capacity shortfall would be 40 MW in 2010 and would be as high as 80 MW in 2012.

In the instant docket, in HECO ST-4, it was indicated that a new, May 2009, peak demand forecast was available. A comparison of the forecasts is provided below:

Comparison of May 2009 and September 2008 Peak Demand Forecasts
With Future DSM but Without Load Management and Rider I
Standby Loads Must be Served by Hawaiian Electric

Year	Net System Peak (MW)		
	September 2008 Forecast	May 2009 Forecast	Difference (May 2009 - September 2008)
2009	1,246		
2010	1,243	1,165	-78
2011	1,252	1,176	-76
2012	1,264	1,208	-56
2013	1,296	1,219	-77
2014	1,319	1,243	-76

Based on the substantially lower May 2009 peak demand forecast, Hawaiian Electric re-evaluated its reserve capacity situation. The results were provided in the table on page 11 of HECO ST-4 and are reproduced here:

Reserve Capacity Shortfall for Reference and Planning Scenarios (MW) Without CIP CT-1, With May 2009 Sales and Peak Forecast

Year	Reference Scenario	Higher Load (Add 60 MW)
2009	-10	-70
2010	20	-40
2011	10	-50
2012	-30	-90
2013	-10	-70
2014	-10	-70

Because the May 2009 peak demand forecast was substantially lower than the September 2008 forecast, the reserve capacity shortfalls were significantly reduced or eliminated without CIP CT-1 in the Reference Scenario. Shortfalls would still exist under the Higher Load scenario.

In September 2009, Hawaiian Electric compared the September 2008 and May 2009 peak demand forecasts by month with actually recorded peaks by month, adjusted for standby loads.

Month	Recorded Net Peak (a)	Standby Load (b)	Chevron Demand @ peak (c)	Tesoro Demand @ peak (d)	Recorded Peak w/ standby load adjustment (e) = (a)+(b)-(c)-(d)	May 2009 Peak Forecast (f)	Difference with Recorded (w/ standby) (g)= (e) - (f)	Sept 2008 Peak Forecast (h)	Difference with Recorded (w/ standby) (i)= (e) - (h)
Jan 2009	1,114	25	0	18.5	1,121	1,097	24	1,139	-19
Feb 2009	1,084	25	0	0.6	1,108	1,085	23	1,143	-35
Mar 2009	1,035	25	0	0.2	1,060	1,089	-29	1,129	-70
Apr 2009	1,040	25	0	0	1,065	1,091	-26	1,141	-76
May 2009	1,138	25	0.4	4.7	1,158	1,106	52	1,164	-6
Jun 2009	1,164	25	0	0	1,189	1,122	67	1,166	24
Jul 2009	1,181	25	0	0.4	1,206	1,159	47	1,202	4
Aug 2009	1,197	25	2.2	0	1,220	1,173	47	1,239	-20

Notes

(a) Recorded monthly net peak.

(b) Estimated Standby Load based on May 2009 S&P Forecast.

(c) Estimated Chevron demand at the time of monthly peak (MVWeb).

(d) Estimated Tesoro demand at the time of monthly peak (MVWeb).

(e) Recorded monthly net peak with adjustments for standby loads (Tesoro, Chevron, Pearl Harbor). This represents the peak that Hawaiian Electric would have had to have served if the cogoenerating units at Tesoro, Chevron and Pearl Harbor were not operating. This places

the values on an equivalent basis for comparison to the forecast, which assumes Hawaiian Electric needs to serve the Tesoro, Chevron and Pearl Harbor loads.

(f) May 2009 S&P forecast.

(g) Difference between recorded and May 2009 forecast.

(h) Sept 2008 S&P forecast.

(i) Difference between recorded and Sept 2008 forecast.

It can be seen from the table that in recent months (June, July and August 2009), the recorded peaks (adjusted for standby loads) have significantly exceeded the monthly peak demand forecast from May 2009. In fact, in June and July 2009, the recorded peaks even exceeded the monthly peak demand forecast from September 2008, which was a higher forecast than the May 2009 forecast.

Therefore, in the near term at least, it appears that the September 2008 peak demand forecast is closer to the recorded peaks. Given this, the reserve capacity shortfalls given in Table 8A above would be representative of the current situation.

Peak Demand Forecasting Uncertainty

Peak demand for electricity is dependent on many factors, including but not limited to, macro and micro economic conditions; weather conditions including temperature, humidity, and rainfall over short periods of time; the delivered price of electricity; the levels of energy savings and conservation achieved through various demand-side measures; and the performance of customer-sited generation at any given time. In fact, peak demand for electricity, by definition is an atypical event driven by non-average or anomalous conditions for these and other factors. Nonetheless, assumptions for these factors are made as part of the process of forecasting peak demand, and the actual results for these aforementioned factors can have a tremendous impact on actual peak demand. Consequently, actual peak demand for electricity may be lower or higher than forecasts of peaks. As of August 2009, the actual recorded monthly peak in 2009, adjusted for standby loads, was 1,220 MW which is higher than the forecasted peak demand for all five years of the May 2009 peak forecast, 2009 through 2013, by as little as 1 MW in 2013 and as much as 55 MW in 2010.

New development or the absence of new projects taken into account in a forecast also adds to the uncertainty of the system peak. A few major projects are still expected to come online over the next few years such as the Disney Resort at Ko Olina and Trump Tower in Waikiki. The military has funding approvals for several major projects and in late 2013, the first leg of the Honolulu mass transit project is expected to be operational with substantial new load. Uncertainties on the actual loads for these projects and their actual schedules for their development add additional uncertainty to the peak demand forecast.

Hawaiian Electric recognizes that there are many factors that contribute to actual loads being higher or lower than its forecast and therefore, it must evaluate the potential impact of all the uncertainties the forecasted demand would have on the need for capacity. In order to so, alternative scenarios are examined as described above.